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LEVINE, BLASZAK, BLOCK & BOOTHBY

1300 CONNECTICUT AVENUE, NW

SUITE 500

WASHINGTON, D.C. 20036-1703

(202) 223-4980

FAX (202) 223-0833

March 14, 1996

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

BY HAND

Mr. William F. Caton

Acting Secretary

Federal Communications Commission

1919 M Street, N.W.

Room 222

Washington, D.C. 20554

Re: CC Dkt. No. 94-1, Price Cap Performance Review for Local
Exchange Carriers

Dear Mr. Caton:

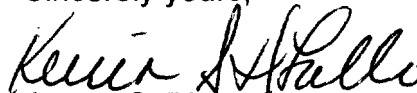
On behalf of our client, the Ad Hoc Telecommunications Users Committee ("Ad Hoc"), we hereby submit the original Affidavit of Patricia Kravtin, to be associated with the Motion to Compel Production of Documents, Or, In the Alternative, to Strike, filed by Ad Hoc in the referenced proceeding on March 13, 1996.

That Motion attached as Exhibit 1 a facsimile copy of the attached Affidavit and noted that Ad Hoc would provide the Commission with the original Affidavit upon receipt. Accordingly, we are tendering the original Affidavit and four copies thereof with this letter.

We also are serving copies of this letter and the attached Affidavit on all parties on the attached Certificate of Service.

Thank you for your assistance. Please direct any questions to the undersigned.

Sincerely yours,



James S. Blaszk

Kevin S. DiLallo

Counsel for the
Ad Hoc Telecommunications
Users Committee

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MAR 14 1996

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Price Cap Performance Review for) CC Docket 94-1
Local Exchange Carriers)

COMMONWEALTH OF MASSACHUSETTS)
) S.S.
COUNTY OF SUFFOLK)

AFFIDAVIT OF PATRICIA D. KRAVTIN

I, Patricia D. Kravtin, do hereby solemnly swear and state the following:

1. I am Vice-President and Senior Economist at Economics and Technology, Inc. ("ETI"), One Washington Mall, Boston, Massachusetts. I studied in the Ph.D. program in economics at the Massachusetts Institute of Technology where I was a National Science Fellow. I attended George Washington University on an Honors Scholarship where I received a B.A. with distinction in economics. I was elected to Phi Beta Kappa and Omicron Delta Epsilon in recognition of high scholastic achievement in the field of economics. My fields of study have included Industrial Organization, Governmental Regulation of Industry, and urban and regional economics. I have in the past performed research and policy analysis at the United States Department of Commerce, the Securities and Exchange Commission, and the Private Radio Bureau of the Federal Communications Commission. Since joining ETI in 1982, I have been

actively involved in telecommunications regulatory proceedings before the Federal Communications Commission and over 25 state jurisdictions, frequently submitting expert testimony or affidavits. Over the past several years, I have done extensive analysis of LEC price cap plans and productivity offset formulas in connection with CC Docket 94-1 and other state price cap proceedings. My Statement of Qualifications is provided as Attachment 1.

A. Introduction

2. At the request of the Ad Hoc Telecommunications Users Committee (“Ad Hoc”), ETI prepared two reports concerning LEC price cap plans in the above-captioned matter, *Establishing the X-Factor for the FCC Long-term LEC Price Cap Plan*, and *Reply to X-Factor Proposals for the FCC Long-term LEC Price Cap Plan*, which Ad Hoc submitted to the Commission on January 16, 1996, and March 1, 1996, respectively. Dr. Lee Selwyn of ETI and I were primarily responsible for preparing those reports, and in connection therewith, for analyzing the report entitled *Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans* (“Revised” or “Simplified” Christensen TFP Study) submitted by the United States Telephone Association (“USTA”) with its initial comments on January 16, 1996.

3. To undertake a meaningful analysis of the Revised Christensen TFP Study, I prepared a list of the underlying data that ETI would require from USTA to corroborate the methodology employed, and replicate and verify the results reached in accordance with the parameters of Paragraphs 15 and 148 of the Commission’s Fourth Further Notice of Proposed Rulemaking in CC Docket 94-1 (“FFNPRM”). The list I prepared was incorporated in Ad Hoc’s January 30, 1996 request to USTA for information.

4. Of the six categories of information that Ad Hoc and ETI requested, USTA has provided full and complete responses to only two (Ad Hoc Requests No. 2 and No. 3). For the reasons explained below, USTA's responses to the other four categories of information (Ad Hoc Requests Nos. 1, 4, 5, and 6) are incomplete and inadequate.

5. This Affidavit identifies and discusses the numerous instances in which USTA either failed to provide the data requested by Ad Hoc, or failed to provide the data in the form "necessary to replicate the results submitted in this proceeding" as required under Paragraph 15 of the Commission's FFNPRM. As described in more detail below, these deficiencies prevented ETI from replicating *all* of the results submitted by USTA's consultants in this proceeding (as opposed to just the subset of results selected by USTA), and on the basis of that replication, from performing further analysis of a number of issues raised by the Commission in the FFNPRM.

B. Background

6. As noted in the ETI Report, *Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan* [at p.42], submitted by Ad Hoc on March 1, 1996 with its reply Comments ("the ETI Report"), USTA provided only very limited backup material with its initial Comments. Accordingly, on January 30, 1996, Ad Hoc served a set of data requests on USTA seeking all of the underlying data relied upon in the Revised Christensen TFP Study (encompassing the 1989-1993 and 1990-1994 results for the eleven company sample as well as the 1984-1993 results for the nine company sample) and also additional information needed to replicate Christensen's TFP results and conclusions regarding the input price differential.

7. On February 8, 1996, USTA provided a very limited subset of the requested

information, i.e., the individual company data underlying the expanded eleven company sample results for the 1989-1993 and the 1990-1994 study periods. USTA provided a second installment of additional data on February 23, 1996.

8. In this second (and final) installment, USTA provided a significant quantity of data that is seemingly responsive to Ad Hoc's requests. However, closer examination of the data provided in the second installment reveals that it is incomplete, and in many instances, not reconcilable to data or results presented in USTA's initial Comments so as to preclude replication and further analysis of those results. A complete copy of this material is attached hereto as Attachment 2, and a diskette containing a complete copy of the information USTA provided on diskette February 23, 1996 is being provided to Commission staff concurrently herewith.

C. Flaws in Data Relating to the Nine Company Sample, 1984-1993
(Ad Hoc Data Request No. 1)

9. Ad Hoc Data Request No. 1 asked for all supporting data comparable to that provided in the Total Factor Productivity Review Plan ("TFP Review Plan" or "TFPRP") (submitted by USTA as Attachment B to its initial Comments) for the 1984 to 1993 time period necessary to replicate the "simplified" results shown in Table 8 of the Revised Christensen TFP Study for the original nine company sample, and the individual company data for the time period 1984 to 1993 for each of the nine price cap companies and the derivation of the composite data series shown in the TFPRP necessary to replicate the "simplified" results shown in Table 8.

10. As a threshold matter, as noted in the ETI Report [p.42], while a significant *quantity* of data was provided in USTA's February 23, 1996 response concerning this particular request

for data relating to the nine company sample, the *quality* of the data in terms of organization, intelligibility, completeness, and documentation was conspicuously inferior to the first installment of data by USTA on February 8, 1996 relating to the eleven company sample. In particular, the format of the first installment of data conformed to that of the TFPRP. The TFPRP format displays most of the inputs, calculations, and sources necessary to replicate USTA's results. The data is provided in a single spreadsheet in a logical fashion, so that one can follow the actual data relied upon and the procedural steps followed in the analysis. Ad Hoc Request No. 1 specifically asked USTA to provide "[a]ll supporting data (*comparable to that provided in the TFP Review Plan (TFPRP)*)" (*emphasis added*).

11. By sharp contrast, the data provided by USTA in the February 23 installment of data relating to the eleven company sample was provided in a haphazard fashion. Important pieces of data appear missing. In many instances, the data that is provided do not reconcile with data provided in the TFPRP, or in the February 8 installment of additional data, for the *same* set of companies purportedly using the *same* "simplified" methodology. In other instances, it cannot be determined which data was actually relied upon by Christensen in the calculations underlying the various results shown in his report. The haphazard organization of the data is particularly surprising, because it would seem that a cohesive spreadsheet, similar to the TFPRP, would need to exist in order for Christensen to have calculated the battery of results presented in the "simplified" study relating to the nine company sample for the 1984-1993 period.

12. In the Revised Christensen TFP Study, Christensen presents a number of results relating to the nine company sample in order to validate the new "simplified" methodology vis-a-vis the study methodology he employed in his original studies submitted May, 1994 and January,

1995. In Table 8, Christensen presents TFP results for the 1984 -1993 study period which he purports to be directly comparable in terms of methodology to those presented in Table 9 for the eleven company sample for the study periods 1989-1993 and 1990-1994. In Tables E-1, 1, 2, 3, 4, 5, 6, and 7 of the “Simplified” Study, Christensen presents the results of a variety of sensitivity analyses, showing the effect of individual changes in study methodology between the original and “simplified” studies.

13. In addition, in Attachment A of USTA’s Reply Comments, *Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans: Reply Comments* [at p.27], Christensen now relies on LEC input price growth data from the “simplified” study for the nine company sample for the years 1984 to 1988 in support of his assumption of a zero input price differential. (The various statistical analyses concerning the input price differential previously submitted by Christensen and NERA for USTA, as well as by other LECs, for the period 1984 to 1993, had relied strictly upon LEC input price growth from Christensen’s original studies.)

14. Thus, the results relating to the nine company sample for the study period 1984 to 1994 have been used by Christensen to demonstrate and validate Christensen’s new “Simplified” Study methodology as well as Christensen’s input price differential assumption. Accordingly, the nine company sample results for the 1984 to 1994 study period are as much a part of Christensen’s analysis as the study results for the eleven company sample. On that basis, Ad Hoc had requested (Ad Hoc Request No. 1) full and complete documentation for the nine company sample such that all results pertaining to that sample and associated study period could be replicated. However, because of the incomplete and disjointed nature of the information provided by USTA (in response to Ad Hoc Request No. 1) concerning the nine company sample,

neither the TFP results presented in USTA's initial Comments nor the input price growth data series more recently presented in USTA's reply comments for the years 1984 to 1988 can be replicated.

15. The paragraphs below provide specific examples of the numerous problems encountered by ETI in reviewing data provided by USTA. The list is only illustrative, because as noted in the ETI report [at p. 42], "the disjointed manner in which the data was provided makes [the review] process extremely tedious, time-consuming, and costly," and we have not endeavored to document each and every problem.

16. The problems encountered fall into two categories: (1) discrepancies between the data provided by USTA in the February 23, 1996 response, and the data presented by USTA in the TFPRP (and in the February 8, 1996 data response) for the years 1988-1994 (inconsistencies not only in the data itself, but also in the manner in which the data sets are presented); and (2) data points that were simply omitted from USTA's response, but that were included in the TFPRP and are necessary to replicate Christensen's TFP results for the post-divestiture period.

(1) Discrepancies in the Data

17. There were numerous instances where the additional data provided by USTA in its February 23, 1996 response for the nine company sample did not match the data previously provided in the TFPRP for the overlapping years, 1988-1993 (after adjustments were made to remove data for the two additional companies, Sprint and Lincoln, which were included in the TFPRP data base, but not in the additional nine company sample data.) In most cases where disaggregated company data is being compared, we were able to reconcile the data for some

companies, or for some of the data points for the same company, but not for all, thereby confirming that we were making appropriate comparisons.

18. *Materials/Rents/Services (MRS) Expense*: The materials expense data in the file LECMRS.WK3 (USTA February 23, 1996 response) does not exactly match the materials expense data in the TFPRP. For example, the following compares the two data sets for GTE for 1989:

<u>GTE MRS data for 1989</u>	<u>Feb 23, 1996 LECMRS.WK3</u>	<u>TFP Review Plan Data</u>	<u>Difference</u>
Total Operating Expenses	\$6,967,167,000	\$7,845,704,000	\$878,537,000
Depreciation	\$1,999,412,000	\$2,180,265,000	\$180,853,000
Wages & Salaries	\$2,069,872,000	\$2,304,836,000	\$234,964,000
Fringe Benefits	\$471,816,000	\$539,813,000	\$67,997,000

19. *Rate Changes*: The rate change data in the file RATES.WK3 (USTA February 23, 1996 response) does not correspond to the rate change data from the TFPRP. Furthermore, it appears that RATES.WK3 omits GTE data altogether. The label on the summary page of the computer file reads “RBOCs PLUS SNET.” There is a note at the bottom of the file (this note, as well as the summary page, was not printed in the paper copy of the data response) that reads “No GTE rate change data was obtained to include in the rate index.” However, the TFPRP does include data for GTE. The following example compares the 1990 data from the summary page of RATES.WK3, with two sets of data: (1) the composite data from the TFPRP *minus* Sprint and Lincoln; and (2) the composite data from the TFPRP *minus* Sprint, Lincoln *and* GTE.

<u>Composite Rate Change Data</u>		Data from RATES.WK3 "RBOCs and SNET"	TFP Review Plan minus Sprint and Lincoln	<u>Difference</u>
<i>Local</i>	Credits	(\$54,057,123)	(\$97,449,700)	(\$43,392,577)
	Annualized Rate Chg	(\$673,225,668)	(\$847,844,631)	(\$174,618,963)
	Effective Rate Chg	(\$635,913,651)	(\$816,294,677)	(\$180,381,026)
<i>Intrastate Access</i>	Credits	(\$14,860,000)	(\$14,860,000)	\$0
	Annualized Rate Chg	(\$337,289,830)	(\$293,959,445)	\$43,330,385
	Effective Rate Chg	(\$110,650,020)	(\$66,548,763)	\$44,101,257
<i>Toll</i>	Credits	\$19,797,000	\$19,797,000	\$0
	Annualized Rate Chg	(\$624,540,658)	(\$521,665,945)	\$102,874,713
	Effective Rate Chg	(\$279,359,270)	(\$158,452,889)	\$120,906,381

<u>Composite Rate Change Data</u>		Data from RATES.WK3 "RBOCs and SNET"	TFP Review Plan minus Sprint, Lincoln and GTE	<u>Difference</u>
<i>Local</i>	Credits	(\$54,057,123)	(\$97,449,700)	(\$43,392,577)
	Annualized Rate Chg	(\$673,225,668)	(\$840,367,027)	(\$167,141,359)
	Effective Rate Chg	(\$635,913,651)	(\$805,729,128)	(\$169,815,477)
<i>Intrastate Access</i>	Credits	(\$14,860,000)	(\$14,860,000)	\$0
	Annualized Rate Chg	(\$337,289,830)	(\$280,649,450)	\$56,640,380
	Effective Rate Chg	(\$110,650,020)	(\$53,628,340)	\$57,021,680
<i>Toll</i>	Credits	\$19,797,000	\$19,797,000	\$0
	Annualized Rate Chg	(\$624,540,658)	(\$493,285,085)	\$131,255,573
	Effective Rate Chg	(\$279,359,270)	(\$154,545,260)	\$124,814,010

20. *Labor Expense:* The labor expense data reported in the file LECLAB.WK3 (February 23, 1996 response) outlines two categories - a) compensation and b) number of employees.

- a) Compensation represents the sum of two of the data series previously identified as part of the materials/rents/services expense file: Wages and Salaries, and Fringe

Benefits. Therefore, the same discrepancies identified in Paragraph 16 above apply.

- b) In the TFP Review Plan, data for number of employees is given as End of Year Employee Counts from ARMIS, and then a year to year average employee count is calculated for input into the TFP model. In LECLAB.WK3, employee data is only presented as an average. Below are a few examples where again the data did not match.

USWEST

	<u>1992</u>	<u>1993</u>
TFP Review Plan End of Year Employees	52,393	49,639
Average		51,016
LECLAB.WK3 Average of 1992 and 1993		48,377
Difference		2,639

SOUTHWESTERN BELL

	<u>1988</u>	<u>1989</u>
TFP Review Plan End of Year Employees	57,863	58,362
Average		58,113
LECLAB.WK3 Average of 1988 and 1989		57,239
Difference		874

21. *Capital Additions:* The file LECCAP.WK3 (USTA February 23, 1996 response) presents investment data for six capital asset categories General Support Equipment, Central Office, Transmission, Information Orig/Term, Cable and Wire and Buildings. This is the manner in which the asset categories were outlined in Christensen's original TFP study (submitted May, 1994 and January, 1995). The TFP Review Plan aggregates the data from the six categories into

three categories. The difference in the way this data is presented in the two data sets makes the comparison more complicated, but it is nonetheless possible to compare the data and note the discrepancies. The following is an example of such discrepancies observed for the 1991 investment data reported for GTE:

<u>GTE Additions for 1991</u>	<u>New Data from LECCAP.WK3</u>	<u>TFP Review Plan Data</u>	<u>Difference</u>
Gen Support Eq.	\$229,960,000	\$246,446,000	\$16,486,000
Central Office	\$487,047,000	\$580,682,000	\$93,635,000
Transmission	\$335,145,000	\$372,873,000	\$37,728,000
IOT	\$56,678,000	\$59,255,000	\$2,577,000
Cable and Wire	\$963,596,000	\$1,105,129,000	\$141,533,000
Buildings	\$100,539,000	\$112,896,000	\$12,357,000

22. *1988 Book Value of Gross Plant:* Unlike the capital addition investment data, the 1988 gross plant data is reported for the three asset categories used in the TFP Review Plan; General Support Equipment, Communications Equipment and Structures. In the file 88TPIS.WK3 (USTA February 23, 1996 response, computer file only, this data is not shown on the printouts provided in the response) there is "Total Industry" data which *includes Sprint and Lincoln*. This data should correspond exactly to the data input in the TFP Review Plan for the series CAPSTK1 (lines 100-120), but it does not.

<u>1988 Book Value of Gross Plant</u>	<u>New Data from 88TPIS.WK3</u>	<u>TFP Review Plan</u>	<u>Difference</u>
Gen Support Eq.	\$13,288,383,000	\$13,364,727,000	\$76,344
Communications Eq.	\$92,079,303,000	\$93,113,629,000	\$1,034,326
Structures	\$96,187,123,000	\$97,698,628,000	\$1,511,505

23. *Taxes:* Once again, there are inconsistencies in the data presented for tax information. First, for the years 1984 - 1987, the file TAX.WK3 (USTA February 23, 1996 response) presents *five* categories of taxes, whereas the latter part of the study period (1988-1993) shows *six* categories. It appears that the missing category in the early years is Capital Stock Taxes. That aside, comparing data for Ameritech, differences occur in almost every year for the categories "Capital Stock Taxes" and "Other Taxes".

*Ameritech Capital
Stock Taxes*

	<u>TAXES.WK3</u>	<u>TFP Review Plan</u>	<u>Difference</u>
1988	\$54,333,662	\$28,734,000	(\$25,599,662)
1989	\$33,157,541	\$29,242,000	(\$3,915,541)
1990	\$33,856,767	\$29,528,000	(\$4,328,767)
1991	\$34,274,592	\$29,943,000	(\$4,331,592)
1992	\$34,308,000	\$30,189,000	(\$4,119,000)
1993	\$24,451,000	\$24,451,000	\$0

*Ameritech Other
Taxes*

	<u>TAXES.WK3</u>	<u>TFP Review Plan</u>	<u>Difference</u>
1988	\$9,100,525	\$34,395,000	(\$25,294,475)
1989	\$28,073,905	\$31,841,000	(\$3,767,095)
1990	\$37,938,106	\$42,076,000	(\$4,137,894)
1991	\$38,245,928	\$42,432,000	(\$4,186,072)
1992	\$34,372,000	\$39,243,000	(\$4,871,000)
1993	\$66,272,000	\$72,662,000	(\$6,390,000)

24. *Special Access Price Index:* The file SPECIAL.WK3 (USTA February 23, 1996 response) recreates the special access price index used in the calculation of LEC output for the years 1984-1993. The following compares the special access price index and growth rate for the years 1988-1992 normalized in 1988.

	Special Access Price Indices		Special Access Growth Rate	
	<u>SPECIAL.WK3</u>	<u>TFP Review Plan</u>	<u>SPECIAL.WK3</u>	<u>TFP Review Plan</u>
1988	1.000	1.000		
1989	0.921	0.924	-7.94%	-7.94%
1990	0.911	0.914	-1.06%	-1.06%
1991	0.934	0.938	2.57%	2.57%
1992	0.893	0.934	-4.38%	-0.37%

25. *Revenues:* The following compares revenue data provided in REV.WK3 (USTA February 23, 1996 response) with comparable revenue data provided in the TFPRP for the year 1991. There are a number of discrepancies, including the inclusion of two categories of revenue given in REV.WK3 that are not in the TFPRP; “Nonregulated” and “Uncollectible” revenues.

<u>1991 Revenue Data</u>	<u>Composite Data from REV.WK3</u>	<u>Total <i>minus</i> Sprint & Lincoln from TFP Review Plan</u>	<u>Difference</u>
Local	\$35,950,646,000	\$36,353,114,000	\$402,468,000
End User Acc	\$5,477,774,000	\$5,552,710,000	\$74,936,000
Switched Acc	\$10,083,865,000	\$10,358,591,000	\$274,726,000
Special Acc	\$2,337,239,000	\$2,352,593,000	\$15,354,000
Intrastate Acc	\$5,613,291,000	\$5,932,810,000	\$319,519,000
Toll	\$12,358,912,000	\$12,670,381,000	\$311,469,000
Miscellaneous	\$8,244,883,000	\$8,450,900,000	\$206,017,000
Nonregulated	\$2,946,448,000	--	(\$2,946,448,000)
Uncollectible	\$938,525,000	--	(\$938,525,000)

26. *Switched Access Lines:* The data from the file LECLINES.WK3 (USTA February 23, 1996 response) on the number of switched access lines does not match that of the TFP Review Plan. In addition to numerical differences, data for the years 1992 and 1993 were not identified on the paper copy of the February 23 response, nor were they provided in a similarly disaggregated fashion (i.e., only aggregate data – no service category detail – was found in the computer file for these years). The following example compares data on the aggregate number of switched access lines (discrepancies also exist for disaggregated access line counts):

<u>Number of Switched Access Lines</u>	<u>Composite Data from LECLINES.WK3</u>	<u>Total <i>minus</i> Sprint & Lincoln from TFP Review Plan</u>	<u>Difference</u>
1990	\$117,998,102	\$119,227,701	\$1,229,599
1991	\$121,887,061	\$123,279,812	\$1,392,751
1992	\$123,820,793	\$125,578,899	\$1,758,106
	\$124,600,980	\$129,419,360	\$4,818,380
1993			

(2) Missing Data

27. Not only are there disquieting discrepancies in USTA's data, but some data series that we still need to fully replicate the TFP Review Plan including both TFP and input price differential results for the years 1984-1993 were simply not provided with USTA's February 23, 1996 response as detailed below.

28. *Asset Price Indices:* The TFP Review Plan derives asset price indices for the three asset categories from data from the U.S. Bureau of Economic Analysis ("BEA"), using a weighted index (based on investments) for the General Support Equipment category. The TFP

Review Plan supplies the necessary data for the years 1985-1994 (1985-1987 were needed to calculate the three year moving average for capital gains). Therefore, in order to calculate a TFP for the entire period 1984-1993, we would need to calculate the asset price deflators for the years 1981-1984. For this we need the BEA Price Indices and the investment data for those years, neither of which were supplied in the data response. (The investment data specific to the calculation of the aggregate general support equipment category are for Motor Vehicles, Garage and other work equipment, Furniture and Office Equipment and General Purpose Computers, none of which were provided).

29. *Cost of Capital:* The U.S. Cost of Capital which Christensen derives in the TFP Review Plan is based on a number of U.S. data series. In the TFP Review Plan, this data is provided for the years 1986-1993 (the data for 1986 and 1987 were needed to calculate the three year moving average). In order to replicate the TFP Review Plan for the full post-divestiture period, all the appropriate data to derive Cost of Capital is needed for the years 1982-1985. This includes Gross Domestic Product, Labor Compensation, Depreciation, Indirect Business Taxes, Corporate FIT Liability, Current Cost of Net Capital Stock and Constant Cost of Net Capital Stock. None of this data has been provided.

30. *Other:* There are two other data series needed to replicate the TFP results for the 1984-1993 period or data which were included in the TFPRP but not included in the February, 23, 1996 responses: (1) GDP-PI for 1983-1986 to calculate material quantity growth; and (2) US TFP for 1985-1988 to calculate the TFP Differential.

D. Input Price Differential
(Ad Hoc Data Requests Nos. 5 and 6)

31. Ad Hoc Requests Nos. 5 and 6 asked for workpapers and any other supporting data for the various studies necessary to replicate and verify both telephone industry and US economy input price results relied upon by National Economics Research Associates ("NERA") and Christensen in their analysis of the input price differential.

32. Christensen relies on the input price data presented in Christensen Appendix 3 (USTA initial Comments, Attachment A) and Attachment 1 of the NERA paper (USTA initial Comments, Attachment C) as support for the assertion of a zero input price differential embodied in his "Simplified" Study. The input price data incorporated in the Christensen and NERA studies submitted with USTA's initial Comments come from a variety of different sources and studies, including (but apparently not limited to): a Bell System Study; a Bell Communications Special Report; a Total Factor Productivity study submitted by Christensen in a proceeding before the North Dakota Public Service Commission; and Christensen's original LEC TFP studies submitted in the first phase of this proceeding. Moreover, as mentioned above, Christensen now additionally relies on LEC input price growth data from the "simplified" study for the nine company sample for the years 1984 to 1988 to support his assumption regarding the input price differential. Accordingly, it is important that parties be able to replicate and analyze the various input price results presented by Christensen.

33. As in the case of the data relating to the nine company sample provided by USTA in response to Ad Hoc Request No. 1, the data relating to the input price series provided by USTA in response to Ad Hoc Requests Nos. 5 and 6 are presented in a rather disjointed manner.

While USTA provides a number of additional data series underlying the input price data, the data provided is neither complete (e.g., key data on asset price deflators used to develop the capital input are not provided) nor demonstrates or documents how the labor, material, and capital input data were actually developed from the data provided as necessary for replication of both the LEC and U.S. input price series results.

34. Ad Hoc Requests Nos. 5 and 6 specifically asked for a “breakdown *and development* of capital, labor, and (where applicable) material inputs.” (*emphasis added*) Ad Hoc requested, but USTA also did not provide, “the underlying individual company data for each of the price cap companies used to develop the composite data series necessary to replicate the LEC input price results.” (As mentioned above, necessary information to permit replication of the input price growth data identified in Christensen/USTA’s reply comments based on the “Simplified” Study for the years 1984 to 1988 were similarly not provided by USTA in response to Ad Hoc Request No. 1).

35. In addition, the input price data identified in the February 23, 1996 USTA response as being from source documents does not reconcile with the input price data identified in the Christensen and NERA studies as the “Christensen 2” data set. “Christensen 2” data set uses Christensen’s North Dakota study for pre-1984 data and the USTA LEC study for the post-divestiture period. For the pre-1984 period, the LEC Input Price Change values identified in Christensen 2 do not coincide with the Input Price Change values identified in the February 23, 1996 USTA response as coming from the North Dakota study source. In 1983, for example, “Christensen 2” uses a LEC Input Price Change of 13.7%, while the North Dakota data source shows a change of 12.84% change.

E. Uniform System of Accounts Rewrite ("USOAR")-related adjustments
Ad Hoc Data Request No. 4

36. Ad Hoc Data Request No. 4 asked for workpapers which detail the USOAR-related adjustments described on page 32 of the Christensen "simplified study" as made to the nine company sample for the period 1984-1993 necessary to replicate the results shown in Table 8.

37. In its February 23, 1996 response, USTA provided additional data used in the calculation of the USOAR-related adjustments. Once again, however, the data is not provided in such a manner as to permit the replication of Christensen's actual adjustments. Ad Hoc Request No. 4 specifically asked USTA to provide "workpapers *which detail* the USOAR-related adjustments... necessary to replicate the results shown in Table 8" (*emphasis supplied*). The workpapers provided by USTA did not detail the adjustments themselves, nor did they show how those adjustments were used to arrive at the results shown in Table 8.

F. Conclusion

38. As described in this Affidavit, there are numerous instances in which USTA either failed to provide the data requested by Ad Hoc, or failed to provide the data in the form "necessary to replicate the results submitted in this proceeding" as required by Paragraph 15 of the Commission's FFNPRM. The deficiencies detailed above have hampered ETI's analysis of X-factor issues. In particular, these deficiencies have prevented ETI from replicating *all* of the results submitted by USTA's consultants in this proceeding, and on the basis of that replication, from performing further analysis of a number of key issues raised in the FFNPRM.

I hereby solemnly swear under penalty of perjury that the foregoing is true and complete to the best of my knowledge, information, and belief.

Patricia D. Kravtin
PATRICIA D. KRAVTIN

SWORN TO AND SUBSCRIBED

before me on this, the 13th day of

March, 1996.

Ellen B. Wasserman
NOTARY PUBLIC

My Commission expires: My Commission Expires Apr 1 1999



Attachment 1

Statement of Qualifications

PATRICIA D. KRAVTIN

Patricia D. Kravtin is Vice President and Senior Economist at ETI. Ms. Kravtin did graduate study in the Ph.D. program in Economics at the Massachusetts Institute of Technology, where she was a National Science Foundation Fellow. Her fields of study have included Industrial Organization, Government Regulation of Industry, and Urban and Regional Economics. While at M.I.T., Ms. Kravtin performed research for the Sloan School of Management and the Joint Center for Urban Studies of M.I.T. and Harvard. Her own empirical work has centered on multiproduct industries and has included econometric estimation of multiproduct cost functions and measurement of product-specific economies of scale and economies of joint production.

While in Washington, D.C., Ms. Kravtin gained valuable insight into the regulatory process performing research and policy analysis at the United States Department of Commerce, the Securities and Exchange Commission, and the Private Radio Bureau of the Federal Communications Commission.

Since joining ETI in 1982, Ms. Kravtin has been actively involved in telecommunications regulatory proceedings in state jurisdictions throughout the country and has frequently testified as an expert witness before regulatory commissions. Ms. Kravtin has testified before the Rhode Island Public Utilities Commission, the Maine Public Utilities Commission, the Florida Public Service Commission, the New York Public Service Commission, the Louisiana Public Service Commission, the Minnesota Public Utilities Commission, the Mississippi Public Service Commission, the Arizona Corporation Commission, the Kentucky Public Service Commission, the Delaware Public Service Commission, the Georgia Public Service Commission, the Tennessee Public Service Commission, the New Hampshire Public Utility Commission, the New Jersey Board of Regulatory Commissioners, the Arkansas Public Service Commission, the Kansas Corporation Commission, and the California Public Utilities Commission. Ms. Kravtin has also testified as an expert witness in anti-trust litigation before the United States District Court for the Eastern District of Tennessee at Greeneville.

Ms. Kravtin's assignments have involved the analysis of both rate design and revenue requirements issues. She has performed analyses of various cost methodologies used by telephone companies to determine costs and set rates, and econometric demand models used to develop estimates of repression and stimulation of demand as a result of price changes. She has conducted numerous analyses of the costs and benefits of local measured service.

Ms. Kravtin has also been involved in the analysis of issues relating to telephone company modernization expenditures and plant utilization. Ms. Kravtin has presented testimony on the subject of infrastructure/plant modernization before the Ohio General Assembly senate select Committee on telecommunications Infrastructure and Technology and the New Jersey Senate Transportation and Public Utility Committee.

More recently, Ms. Kravtin has gained extensive expertise in the area of video and multi-media information service markets. Ms. Kravtin has submitted numerous filings before the FCC concerning the economics of video dialtone investment and/or VDT tariffs proposed by New Jersey Bell, Pacific Bell, Ameritech, Southern New England Telephone, US West, GTE, Bell Atlantic, BellSouth, NYNEX, Puerto Rico Telephone Company and Carolina Telephone in over 25 Section 214 Application proceedings.

Ms. Kravtin has authored and co-authored numerous papers and reports pertaining to these issues. These include the following:

“The Economic Viability of Stentor’s ‘Beacon Initiative,’ Exploring the extent of its financial dependency upon revenues from services in the Utility Segment,” prepared for Unitel, submitted as evidence before the Canadian Radio-television and Telecommunications Commission, March 1995.

“A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network” prepared for the National Regulatory Research Institute, October 1991;

“The U S Telecommunications Infrastructure and Economic Development,” presented at the 18th Annual Telecommunications Policy Research Conference, Airlie, Virginia, October 1990;

“An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington,” prepared for the Washington Utilities and Transportation Commission, March 1990; and

“Telecommunications Modernization: Who Pays?,” prepared for the National Regulatory Research Institute, September 1988.

Ms. Kravtin has also been actively involved in the analysis of issues relating specifically to industry structure, BOC market power and MFJ restrictions, regulatory reform, price caps regulation, and local and long-distance competition in the telecommunications industry at both the state and federal level. Ms. Kravtin has served as an expert witness in antitrust cases involving BOC monopolization. She has co-authored numerous papers and reports pertaining to

these issues. These include the following:

“Reply to X-Factor Proposals for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, March 1, 1996.

“Establishing the X-Factor for the FCC Long-Term LEC Price Cap Plan,” prepared for the Ad Hoc Telecommunications User Committee, submitted in FCC CC Docket 94-1, December, 1995.

“Fostering a Competitive Local Exchange Market in New Jersey: Blueprint for Development of a Fair Playing Field,” prepared for the New Jersey Cable Television Association, January 1995.

“The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers,” February 1994.

“A Note on Facilitating Local Exchange Competition,” prepared for the E.P.G., November 1991;

“Testing for Effective Competition in the Local Exchange,” prepared for the E.P.G., October 1991;

“Report on the Status of Telecommunications Regulation, Legislation, and modernization in the states of Arkansas, Kansas, Missouri, Nebraska, Oklahoma and Texas,” prepared for the Mid-America Cable-TV Association, December 13, 1990;

“Sustainability of Competition in Light of New Technologies,” presented at the Twentieth Annual Williamsburg Conference of the Institute of Public Utilities, Williamsburg, Virginia, December 1988;

“Industry Structure and Competition in Telecommunications Markets: An Empirical Analysis,” presented at the Seventh International Conference of the International Telecommunications Society at MIT, July 1988;

“Market Structure and Competition in the Michigan Telecommunications Industry,” prepared for the Michigan Divestiture Research Fund Board, April 1988;

“Impact of Interstate Switched Access Charges on Information Service Providers - Analysis of Initial Comments,” submitted in FCC CC Docket No. 87-215, October 26,

1987;

“An Economic Analysis of the Impact of Interstate Switched Access Charge Treatment on Information Service Providers,” submitted in FCC CC Docket No. 87-215, Sept. 24, 1987;

“Regulation and Technological Change: Assessment of the Nature and Extent of Competition From A Natural Industry Structure Perspective and Implications for Regulatory Policy Options,” prepared for the State of New York in collaboration with the City of New York, February 1987;

“Long-Run Regulation of AT&T: A Key Element of a Competitive Telecommunications Policy,” *Telematics*, August 1984;

“BOC Market Power and MFJ Restrictions: A Critical Analysis of the ‘Competitive Market’ Assumption,” submitted to the Department of Justice, July 1986; and

“Economic and Policy Considerations Supporting Continued Regulation of AT&T,” submitted in FCC CC Docket No. 83-1147, June 1984.

Ms. Kravtin attended George Washington University on an Honor Scholarship where she received a B.A. with Distinction in Economics. She was elected to Phi Beta Kappa and Omicron Delta Epsilon in recognition of high scholastic achievement in the field of Economics. Ms. Kravtin is a member of the American Economic Association.

Certificate of Service

I, Andrew Baer, hereby certify that true and correct copies of the Letter to William F. Caton and Affidavit of Patricia Kravtin were sent on this 14th day of March, 1996 by first-class mail, postage prepaid, or by hand delivery to the following persons:

Mary McDermott
General Counsel
United States Telephone Association
1401 H Street, N.W.
Suite 600
Washington, D.C. 20005-2136

Mark Uretsky*
Senior Economist
Common Carrier Bureau
Federal Communications Commission
1919 M Street, N.W., Room 518
Washington, D.C. 20554

Charles Cosson
Counsel
United States Telephone Association
1401 H Street, N.W.
Suite 600
Washington, D.C. 20005-2136

Anthony Bush*
Tariff Review Branch
Common Carrier Bureau
Federal Communications Commission
1919 M Street, N.W., Room 518
Washington, D.C. 20554


Regina Keeney*
Chief, Common Carrier Bureau
Federal Communications Commission
Room 500
1919 M Street, NW
Washington, D.C. 20554

ITS, Inc.*
2100 M Street, NW
Suite 140
Washington, D.C. 20037

A. Richard Metzger, Jr.*
Deputy Chief, Common Carrier Bureau
Federal Communications Commission
Room 500
1919 M Street, NW
Washington, D.C. 20554

James Schlichting*
Chief, Tariff Division
Common Carrier Bureau
Federal Communications Commission
Room 518
1919 M Street, NW
Washington, D.C. 20554

* By Hand



Andrew Baer